

## **HIKING AND SURVIVAL STAFF**

### **BACKGROUND OF THE INVENTION**

#### **Field of the Invention**

- [01]** The present invention relates to walking sticks. More particularly, the present invention relates to a walking stick that includes survival equipment.

#### **Description of the Related Art**

- [02]** Hiking typically involves traversing uneven or previously undisturbed terrain, such as an ascent or descent of a slope; navigating rocks, boulders and/or cliffs; and/or crossing creeks and streams. Often, vegetation is pushed aside as the terrain is traversed. It is instinctive to attempt to aid oneself with additional support while traversing terrain, such as by steadying oneself using a tree or a rock. Additional support, such as a hiking stick or a pole, is sometimes used in order that a person may maintain a normal, erect posture. It has also become common to use a hiking stick in each hand.
- [03]** Existing hiking sticks and poles are lightweight and made of a tubular construction and have a length that is adaptable to a user. See for example, U.S. Patent No. 4,351,348 to Axton and U.S. Patent No. 4,407,318 to Stuever. Additionally, hiking sticks and poles have been used as multi-purpose supports for various hiking and other outdoor gear, such as a camera support, a gun rest, a shelter pole and/or prop, a pick head and ski pole attachments.
- [04]** One drawback with conventional hiking sticks and poles having a tubular construction is that they lack sufficient strength for allowing a user to dynamically load the hiking stick with any significant portion of the user's bodyweight without the possibility of the tubular sections

bending or failing. A similar drawback with conventional hiking sticks and poles having length adjustable sections is that when a user dynamically loads the hiking stick with a significant portion of the user's bodyweight, there is a possibility that any of the length adjusting mechanisms between may fail, thereby causing the pole to collapse.

- [05] A drawback with conventional hiking sticks and poles having length-adjustable sections is that the adjustable sections terminate at a height that is at the approximate height of a user's hand. Consequently, conventional poles lack sufficient height for allowing a user to conveniently deflect vegetation and other obstacles from the user's head and chest area without disengaging the pole from the ground, thereby eliminating the pole's utility as a balance or support-assisting device. Moreover, the relatively short length of such conventional hiking sticks and poles do not permit a user to conveniently place the bottom of a pole into a creek or stream of some depth when crossing the creek or stream without the user bending over to uncomfortable or unbalanced positions.
- [06] Additionally, survival devices have been developed for assisting a person in remaining alive until rescued. Most of these devices, however, are cumbersome, do not include particular features for sustaining life for a period of time while affording the additional utility as a balance or support assisting device as a hiking stick or pole. Accordingly, conventional survival devices are frequently left at home or used only occasionally.
- [07] Consequently, what is needed is a hiking stick or pole that (1) has sufficient strength for allowing a user to dynamically load the hiking stick with a significant portion of the user's bodyweight with a minimal possibility of the hiking stick bending or failing; (2) allows a user to conveniently deflect vegetation and other obstacles from the user's head and chest area without disengaging the pole from the ground; (3) allows a user to conveniently place the

bottom of the hiking stick into a creek or stream of some depth when crossing the creek or stream; and (4) includes survival devices for sustaining life for a period of time without losing the utility as a balance or support assisting device.

#### BRIEF SUMMARY OF THE INVENTION

**[08]** The present invention provides a trekking staff having sufficient strength for allowing a user to dynamically load the trekking staff with a significant portion of the user's bodyweight with a minimal possibility of the trekking staff bending or failing. Additionally, the trekking staff of the present invention is long enough to allow a user to conveniently deflect vegetation and other obstacles from the user's head and chest area without disengaging the trekking staff from the ground. Further still, the trekking staff of the present invention allows a user to conveniently place the bottom of the hiking stick into a creek or stream of some depth when crossing the creek or stream. Moreover, the trekking staff of the present invention includes survival devices for sustaining life for a period of time without losing the utility as a balance or support assisting device.

**[09]** The advantages of the present invention are provided by a trekking staff having a solid shaft portion and a hollow elongated chamber portion. The hollow elongated chamber portion is detachably coupled to the solid shaft portion. The hollow elongated chamber portion can include a direction finding device, such as a mechanical magnetic compass, an electronic magnetic compass, or a global positioning system receiver. Additionally or in the alternative, the hollow elongated chamber portion can contain a personal water purification system, a personal water collection system, a personal first aid kit, survival equipment, unidirectional or bidirectional communication equipment, and/or a transmitter that transmits a homing signal and/or a positional information signal. The hollow chamber portion can also contain an MP3 player. The first aid kit can include a single-use medication dispenser having a reservoir

containing a single-use portion of an antiseptic liquid-type bandage material and a tearable opening through which the liquid-type bandage material is dispensed.

- [10] The trekking staff of the present invention can also include a grip portion that has a shape that conforms to a shape of the trekking staff and can include a strand of cord-like material. In one exemplary embodiment of the present invention, the grip portion is spool shaped and the strand of cord-like material is wrapped around the spool-shaped grip portion. The cord-like material can also be long enough to include a loop that is adjustable in size.
- [11] The trekking staff of the present invention can also include a light emitting device that is selectably controllable to emit one of a constant light and a flashing light. Additionally, the light emitting device can be selectably controllable to emit a flashing light containing, for example, a message in Morse code. The light emitting device can also emit a plurality of light colors that are selectably controlled.
- [12] The trekking staff of the present invention includes a tip portion that is detachably coupled to the solid shaft portion. The tip portion can be tapered and have a cross-sectional shape that is round or square. Alternatively, the tip portion can include an aperture having a size that allows a cord-like material to pass through the aperture.
- [13] The present invention also provides a trekking staff having a shaft portion having a first end and a second end and a hollow elongated chamber portion having a first end and a second end, the second end of the hollow chamber being detachably coupled to the first end of the solid shaft portion, the hollow elongated chamber portion containing an audio reproduction device. The audio reproduction device can be an MP3 player or a tape player. Moreover, the shaft portion can be a solid shaft or a tubular shaft.

- [14] Further still, the present invention provides a single-use medication dispenser having a reservoir containing a single-use portion of liquid-type bandage material, and a tearable opening through which the liquid-type bandage material is dispensed. Alternative, the single-use medication dispenser contains a single-use portion of antiseptic.

#### BRIEF DESCRIPTION OF THE DRAWINGS

- [15] The present invention is illustrated by way of example and not by limitation in the accompanying figures in which like reference numerals indicate similar elements and in which:
- [16] Figure 1 depicts a cut-away view of an exemplary top portion for a first exemplary embodiment of a trekking staff according to the present invention;
- [17] Figures 2A-2C depict exemplary portions of a trekking staff according to the present invention shown in Figure 1;
- [18] Figure 3 shows an exemplary cross-sectional view of a hollow chamber according to the present invention;
- [19] Figure 4 shows a schematic block diagram for an exemplary light emitting device according to the present invention;
- [20] Figures 5A-5C show exemplary tip portions having eyes for the trekking staff according to the present invention;

- [21] Figures 6A and 6B respectively depict a section of an exemplary upper portion and an exemplary lower portion of a second exemplary embodiment of a trekking staff according to the present invention;
- [22] Figure 6C shows an alternative configuration of the second exemplary embodiment of a trekking staff according to the present invention;
- [23] Figure 7A shows a cross-sectional view of an exemplary embodiment of a survival wand according to the present invention;
- [24] Figure 7B shows plug 701 having a loop 702 and an adjustable slide 703 that are fastened to plug 701 at lanyard loop 704; and
- [25] Figures 8A and 8B respectively show top and side views of an exemplary embodiment of a single-use medication dispenser according to the present invention.

#### DETAILED DESCRIPTION OF THE INVENTION

- [26] The present invention provides a multi-purpose trekking staff that overcomes the drawbacks of conventional hiking sticks and poles. In that regard, the trekking staff of the present invention has sufficient strength for allowing a user to dynamically load the trekking staff with a significant portion of the user's bodyweight with a minimal possibility of the trekking staff bending or failing. Additionally, the trekking staff of the present invention has a length that allows a user to conveniently deflect vegetation and other obstacles from the user's head and chest area without disengaging the trekking staff from the ground. Further, the length of the trekking staff of the present invention is sufficient to allow a user to conveniently place the bottom of the trekking staff into a creek or stream of some depth when crossing the creek or

stream. Further still, the present invention includes survival devices for sustaining life for a period of time without losing the utility as a balance or support assisting device.

- [27] Figures 1 and 2A-2C depict exemplary portions of a first exemplary embodiment of a trekking staff 100 according to the present invention. In particular, Figure 1 depicts a cut-away view of an exemplary top portion of a trekking staff 100. Figure 2A depicts an exemplary middle portion of a trekking staff 100. Figure 2B depicts an exemplary bottom portion of a trekking staff 100, and Figure 2C depicts an exemplary tip portion of a trekking staff 100. Trekking staff 100 includes a solid shaft portion 101 (Figures 2A and 2B) and a hollow elongated chamber portion 102 (Figure 1). Hollow chamber 102 is detachably coupled to solid shaft portion 101 in a well-known manner, such as by a threaded engagement of threads 104a with threads 104b (Figure 2A). Similarly, a tip portion 103 (Figure 2C) is detachably coupled to solid shaft portion 101 in a well-known manner, such as by a threaded engagement of threads 114a with threads 114b. While Figures 1 and 2A-2C only show portions of trekking staff 100, it should be understood that the overall size of trekking staff 100 is preferably at least six feet in length.
- [28] Solid shaft portion 101 is preferably made from a strong lightweight material, such as aluminum or titanium, but can be made from other strong materials such as steel, wood or a carbon fiber material. Regardless of the material used, solid shaft portion 101 has sufficient strength to be dynamically loaded with a significant portion of a user's bodyweight with a minimal possibility of the shaft portion bending or failing.
- [29] Hollow chamber 102 can be formed from a hollow aluminum tubing that includes a compartment containing a number of items, such as survival gear, a personal water purification system, a personal water collection system, a personal first aid kit, unidirectional

or bidirectional communication equipment, direction finding equipment, like a compass or a global positioning system (GPS) receiver, a transmitter that transmits a homing signal and/or a positional information signal. Hollow chamber 102 can also have direction finding equipment that is visible and/or accessible on the outside surface of chamber 102. For example, Figure 1 shows hollow chamber 102 having a mechanical magnetic compass 105. Alternatively, the direction finding equipment that is visible and/or accessible on the outside of chamber 102 can be an electronic compass or a GPS receiver. As yet another alternative configuration, hollow chamber 102 can contain an MP3 player so that music of the user's preference can accompany the user as trekking staff is being used.

- [30] Figure 3 shows an exemplary cross-sectional view of hollow chamber 102 according to the present invention. Items for building a fire that can be contained in hollow chamber 102 can include are tinder and charred material 301 and a flint and striker 302. Items for being heard or seen can include a whistle 303, vinyl tape 304 and flagging tape 305. Vinyl tape 304 can have sufficient strength and adhesive properties to be used for signaling and/or forming shelter. Other items that can be included in hollow chamber 102 can include a knife 306, a first aid kit 307, a fishing kit 308 containing, for example, fishing line, hooks and a lure, plastic bags 309, such as whirl-pack-type bags, a length of, for example, 1/8' x 1/16" x 8' plastic tubing 310, and a water purification system, such as water purification tablets 311 or a water filter. Still other items can include a 6' x 6' x 2 mil plastic sheet 312 that can be used for shelter and/or for collecting water, a wire saw 313, and a space blanket 314. A housing 315 for compass 105 can be threaded at 316 onto the top of hollow chamber 102. A housing 317 for a light emitting device 111, such as a super bright LED, can be threaded at 318 onto housing 315. Housing 317 is large enough to hold a circuit board, an actuator, super bright LED and batteries. Housing 317 shown in Figure 3 is an alternative configuration from the configuration shown in Figure 1. In particular, housing 317 includes a concave reflective



surface 319. Additional details regarding the light emitting device are given elsewhere in this disclosure.

- [31] Trekking staff 100 includes a grip portion 106 that generally conforms to the shape of trekking staff 100. Figure 2A shows an exemplary grip portion 106. Grip portion 106 preferably includes flanges 107 so that grip portion 106 has the general shape of a spool and to provide a stopping surface for a user's hand. A length of a cord-like material 108, such as a piece of rope or string, that is wrapped around grip portion 106 to provide a grippable surface for grip portion 106. Cord-like material 108 preferably has a sufficient length to form a loop 109 having an adjustable slide 110. A user's hand can be placed through loop 109 while gripping grip portion 106, thereby connectively securing trekking staff 100 to a user by cord-like material. Slide 110 permits the size of loop to be adjusted to the preference of a user.
- [32] Hollow chamber 102 can include a light emitting device 111. Figure 1 shows an exemplary light emitting device 111 that is located at the top of trekking staff 100. Preferably, light emitting device 111 is an LED that can be controlled in a well-known manner to be either continuously on (or pulsed to appear to be continuously on), or flashing. Figure 4 shows a schematic block diagram for light emitting device 111. A controller 401 is responsive to actuator 402 to turn LED 403 on and off. A battery power supply is not shown in Figure 4. Actuator 402 can be a mechanical switch that is physically actuated by a user or can alternatively be a Hall-Effect-type sensor that outputs an actuator signal in response to a magnet passing in close proximity to actuator 402. Such a magnet can be, for example, attached to loop 109 or contained within slide 110 so that it is conveniently available to a user. Additionally, controller 401 can selectably control LED 403 to flash a message in Morse code, such as SOS. LED 403 can emit a single colored light, such as white, for

illuminating an area, and/or can emit one or more of a plurality of colored lights that are selectable by a user. Light emitting device 111 can be fixed to hollow chamber 102, or can be detachable from hollow chamber 102 and stored within hollow chamber 102. Further, light emitting device 111 can have a slidable shroud or an adjustable lens with which a user can generally illuminate an area, or can alternatively form a directionally shaped beam of light.

[33] Tip portion 103 is detachable secured to solid shaft portion 101 so that a user can select a tip that has an appropriate shape and/or is made from an appropriate material for the terrain the user will be traversing. For example, Figure 2C shows an exemplary tip portion 103 that has a generally tapered and rounded end 112 that can be made from, for example, aluminum, titanium, steel, wood, rubber, etc. Tip portion 103 can have any of a number of cross-sectional shapes, including round and square. Alternatively, tip portion 103 can have a pointed end or a flat end. As yet another alternative, tip portion 103 can be shaped to form an eye 113, such as shown in Figure 5A, having a sufficient size that a string can pass through eye 113 and a user can use trekking staff 100 as a fishing pole. Figures 5B and 5C respectively show longitudinal and end views of an alternative tip configuration having an eye 513 and so a user can use trekking staff 100 as a fishing pole. For the alternative tip configuration shown in Figures 5B and 5C, tip end 112 is threadably removable so that washer and eye assembly 512 can be fitted between solid shaft portion 101 and tip portion 103.

[34] Figures 6A and 6B respectively depict a section of an exemplary upper portion 601 and an exemplary lower portion 602 of a second exemplary embodiment of a trekking staff 600 according to the present invention. As depicted in Figures 6A and 6B, trekking staff 600 is a hollow tubular shaft formed from, for example, a strong lightweight material, such as aluminum or titanium, but can be made from other strong materials such as steel or a carbon

fiber material. As shown in Figure 6A, upper portion 601 includes a chamber 602 containing an audio reproduction device 603, such as an MP3 player, and a power source 604, such as batteries, for powering audio reproduction device 603. Audio reproduction device 603 can include such features as a headphone jack 606, and/or a battery charger jack 607 and or controls (not shown). Upper portion 601 is detachably coupled to a hollow chamber (not shown in Figure 6A), such as hollow chamber 102 shown in Figure 3, by, for example, a threaded engagement 605. Alternatively, upper portion 601 is detachably coupled to a hollow chamber having selected features of exemplary hollow chamber 102 that is shown in Figure 3. Trekking staff 600 also includes a tip portion (not shown) that can be any of the exemplary tip portions shown in Figures 2 and 5. Figure 6C shows an alternative configuration of trekking staff 600 in which the lower portion of trekking staff 600 is a solid shaft formed from, for example, a strong lightweight material, such as aluminum or titanium, but can be made from other strong materials such as steel, wood or a carbon fiber material. While Figures 6A and 6B (and Figure 6C) only show portions of trekking staff 600, it should be understood that the overall size of trekking staff 600 is preferably at least six feet in length.

- [35] Hollow chamber 102, shown in Figures 1 and 3, can serve as a survival wand that is significantly smaller than trekking staff 100, but provides many of the same survival resource features. Accordingly, the survival wand of the present invention can be placed in, for example, a backpack or hung from a belt. Figure 7A shows a cross-sectional view of an exemplary embodiment of a survival wand 700 according to the present invention. A plug 701 can be threaded into threads 104. Items contained in survival wand 700 are identified in connection with Figure 3. Figure 7B shows plug 701 having a loop 702 with an adjustable slide 703 that is fastened to plug 701 at a lanyard attachment loop 704.

[36] Figures 8A and 8B respectively show top and side views of an exemplary embodiment of a single-use medication dispenser 800 according to the present invention. Single-use medication dispenser 800 is small, like a condiment package, and includes a reservoir 801 containing a single-use amount of medication, such as a liquid-type bandage material, an antiseptic ointment, or a cleanser. A suitable liquid-type bandage material can use a cyanoacrylate-based adhesive or a pyroxylin-based adhesive, such as a product marketed under the tradename NEW-SKIN and made by Medtech Laboratories of Jackson, Wyoming. The overall shape of single-use medication dispenser 800 can be any convenient shape. A suitable material for single-use medication dispenser 800 is disclosed by U.S. Patent No. 4,268,531 to Whiting, Jr., and which is incorporated by reference herein. Medication dispenser 800 is used in manner similar to a condiment package, for example, by cutting or tearing package 800 between cuts 802a and 802b, thereby opening application nozzle 803. Accordingly, single-use medication dispenser 800 can be an item contained in hollow chamber 102 of survival staff 100 (Figure 1), first aid kit 307 (Figure 3) and in survival wand 700.

[37] Although the foregoing invention has been described in some detail for purposes of clarity of understanding, it will be apparent that certain changes and modifications may be practiced that are within the scope of the appended claims. Accordingly, the present embodiments are to be considered as illustrative and not restrictive, and the invention is not to be limited to the details given herein, but may be modified within the scope and equivalents of the appended claims.